

### **REMARKS**

The Official Action mailed August 25, 2003, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Two Month Extension of Time*, which extends the shortened statutory period for response to January 25, 2004. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on June 2, 1999, March 31, 2000, June 21, 2000, July 30, 2001, February 15, 2002, April 18, 2002, October 28, 2002, November 21, 2002, and January 3, 2003. However, the Applicants have not received acknowledgment of the Information Disclosure Statements filed on July 1, 2003, and December 16, 2003. The Applicants respectfully request that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of these Information Disclosure Statements.

Claims 1-80 are pending in the present application, of which claims 1, 10, 19, 32, 45 and 68 are independent. The independent claims have been amended to better recite the features of the present invention. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 1-80 under 35 U.S.C. § 112, first paragraph, asserting that "[it] is unclear how a semiconductor layer exhibiting a peak of Raman spectra, displaced from a peak of single crystalline silicon to the lower frequency direction can have substantially no grain boundaries" (page 2, Paper No. 31). Paragraph 5 of the Official Action rejects claims 1-80 under 35 U.S.C. §112, second paragraph, asserting that "[the] term 'substantially' in claims 1-80 is a relative term whose metes and bounds are not adequately defined by the applicant's disclosure" (page 3, Id.). In response, the Applicants have amended claims 1, 10, 19, 32, 45 and 68 to recite that the semiconductor layer has a semiconductor structure in which Si-Si bonds anchor clusters. The Applicants submit that this amendment clarifies the structure of the semiconductor layer described in the present invention. The

specification adequately describes this feature at page 14, lines 31-33, for example. The Applicants respectfully submit that claims 1-80 are adequately described in the specification and definite as amended. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112 are in order and respectfully requested.

Paragraph 7 of the Official Action rejects claims 1-27, 30-40, 43-53 and 56-76 as anticipated by JP 2-234134 to Sumiyoshi et al. It further appears that the Official Action relies on U.S. Patent No. 5,017,308 to Iijima et al. to support the rejection (pages 4 and 5, Paper No. 31). However, it is unclear that the Iijima reference is officially of record with respect to the anticipation rejection of the claims. In any event, the Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present invention, as amended.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Sumiyoshi does not teach all the elements of the independent claims, either explicitly or inherently. As noted above, independent claims 1, 10, 19, 32, 45 and 68 have been amended to recite that the semiconductor layer has a semiconductor structure in which Si-Si bonds anchor clusters. Sumiyoshi does not teach at least this feature of the present invention, either explicitly or inherently.

Since Sumiyoshi does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(e) are in order and respectfully requested.

Paragraph 9 of the Official Action rejects claims 28, 29, 41, 42, 54, 55 and 77-80 as obvious based on Sumiyoshi. The Applicants respectfully submit that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present invention, as amended.

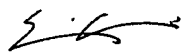
As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims, as amended. That which was well known at the time of the invention does not cure the deficiencies in Sumiyoshi. The Official Action relies on that which was well known at the time of the invention to allegedly teach the presently claimed ranges of electron and hole mobility (page 4, Paper No. 31). However, Sumiyoshi, either alone or in combination with that which was allegedly well known at the time of the invention, does not teach or suggest that the semiconductor layer has a semiconductor structure in which Si-Si bonds anchor clusters.

Since Sumiyoshi does not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

  
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Eric J. Robinson  
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.  
PMB 955  
21010 Southbank Street  
Potomac Falls, Virginia 20165  
(571) 434-6789